

# The NICHD Connection

## February 2018

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## Proprietary Projects: Postdoc to PI Transition

By Erin Walsh, PhD

In today's research climate, obtaining a tenure-track research position can seem impossible to many postdocs. A surplus of academic scientists, declines in research funding paylines, and growing competition to publish in high-level journals are just a few of the obstacles that have exploded in magnitude since the previous generation of scientists were on the job market.

Over a discussion about academic careers last fall, Dr. Yvette Pittman, Director of the NICHD Office of Education, brought to my attention a [Comment article](#) that had recently been published in *Nature*. In the article, Dr. Ben A. Barres, former Professor of Neurobiology at Stanford University School of Medicine and long-standing advocate for equality in science, makes a strong argument in favor of project sharing between principal investigators and postdocs leaving to start their own labs. Though a controversial topic among some investigators, he argued that the practice of project sharing is essential for young scientists to succeed in this competitive research world.

Dr. Barres' article emphasizes that the "short tenure clock" makes it extremely difficult to succeed if a tenure-track scientist must start research in an entirely different field or projects from scratch. He expressed that preventing project sharing causes young investigators to be pitted against established labs, and harms science just as monopolies harm the economy.

But like us postdocs, PIs are passionate about their science and have their own professional goals. Perhaps they are striving to become the top scientist in their field or envision winning a Nobel Prize. Some PIs are also concerned that they would be harming science if their established lab stopped working on a groundbreaking project. Indeed, new investigators typically start out with far fewer resources compared to what their mentors have right at their fingertips, so projects will likely progress at a slower pace.

Dr. Gisela "Gigi" Storz, an NICHD Distinguished Investigator, was kind enough to meet with me and provide her perspective on this issue. When starting out as an investigator, Dr. Storz was able to take her postdoctoral projects with her to launch her new lab. Since then, she has carried forward a proactive mentoring style with her own trainees.

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Eunice Kennedy Shriver National Institute  
of Child Health and Human Development



## Letter from the Editor

Let's talk tough topics. By tough topics, I don't mean how to remove the chorion from a zebrafish embryo without destroying your sample. I'm referring to topics like project sharing between senior postdocs and principal investigators, the proliferation of science hype, and other important issues for trainees entering a career in research.

Over the next two months, NICHD fellows will tackle tough topics by gathering perspectives, comments, and advice from investigators within our institute. We begin with the complicated issue of using postdoctoral research to establish a new, independent lab. Dr. Erin Walsh, postdoctoral fellow in the Woodgate lab, offers [her thoughts on project sharing](#) after meeting with Drs. Gisela Storz and Jon Lorsch. As with any tough topic, answers aren't easy, but Dr. Walsh presents thought-provoking pros and cons to project sharing beyond the postdoc years.

In the ever-present race to publish first, how often, and to what extent, do you share unpublished data with researchers outside your lab? In science, getting "scooped" has nothing to do with ice cream. But does a fear of sharing data too soon slow scientific progress? Recently, several NICHD fellows had a unique opportunity to experience the type of pre-publication discussion that drives science forward. The [2017 International Workshop on Zebrafish Neural Circuits and Behavior](#) provided a venue for researchers from around the world to learn from each other by discussing exciting data from their labs. As a volunteer for the zebrafish workshop, Dr. Ashwin Bhandiwad, postdoctoral fellow in the Burgess lab, gained access to this forward-thinking meeting. His recap of the event offers insight into the importance of pre-publication discussions among scientists. One benefit of "in-progress" dialogue that stood out to me was the opportunity to standardize terminology *before* going to print!

A topic that isn't tough at all is finding opportunities for career development at the NIH. Check out this month's ["Rep Report"](#) and [February announcements](#) and [events](#) for a variety of upcoming events and community outreach projects.

Your Editor in Chief,  
Shana R. Spindler, PhD

Questions, comments, or ideas for the newsletter? Please email our editor at [Shana.Spindler@gmail.com](mailto:Shana.Spindler@gmail.com).



## Proprietary Projects: Postdoc to PI Transition

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Dr. Storz agrees with Dr. Barres that preventing project sharing creates additional obstacles, which can drive young researchers out of science entirely. For Dr. Storz, it can be sad to see certain projects leave her lab and perhaps not progress as quickly as she would like. But for her, the pay-off she experiences is the pride that comes with having her former postdocs succeed.

Dr. Storz feels there is often a dichotomy between personal mentoring goals and the objective metrics being used to define a PI's productivity. Throughout her career, Dr. Storz has prioritized hiring, training, and mentoring individuals who come from backgrounds with little to no prior research experience. Doing so serves the scientific community at large, and yet it can come as a sacrifice to a PI who devotes extra time and resources towards training the less experienced.

I also had the opportunity to discuss project sharing with the NIGMS Director, Dr. Jon Lorsch. Dr. Lorsch supports the practice of project sharing but adds an interesting caveat to the discussion: though project sharing is nearly essential for junior investigators to succeed, this type of scientific culture is limiting the potential for exploration and discovery. Often the metrics used by faculty hiring committees and study sections align with candidates whose projects are within the field of their PIs, because established work makes proposed work seem more feasible. As a result, biomedical research has become a field in which feasibility is valued above novelty and exploration.

Dr. Lorsch's views on this topic are also discussed in his blog post "Moving Further Afield" (2016), which can be found within the [NIGMS Feedback Loop Blog](#). Interestingly, he points out that within the chemical sciences, junior faculty are expected to develop projects that are independent from their postdoctoral work and therefore usually in a completely new area of study. From this, he asks if movement toward this type of "sociology" would "accelerate the pace of discovery" within biomedical research.

As a current postdoc, I am left wondering how we can find a sense of control over our career trajectories. The reality is that biomedical research exists in a highly competitive state and it's not practical to expect dramatic changes over night. From Dr. Barres' article and my discussions with Drs. Storz and Lorsch, I find that the common thread is communication.

In his article, Dr. Barres suggests asking potential mentors outright about their project sharing policies. Indeed, most PIs do have their own policies in place, but postdocs might not at first realize the impact it could have on their careers, or are afraid to ask. Both Drs. Storz and Lorsch discussed with me the value they place on maintaining open communication with their trainees about their career goals. Unfortunately, not every PI is as forthcoming a mentor. As postdocs, we must therefore encourage each other to be our own advocates and to actively discuss our career goals and training needs.

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## Proprietary Projects: Postdoc to PI Transition

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In describing their personal mentoring styles, it was clear to me that both Drs. Storz and Lorsch aim for a balance between project sharing and scientific exploration by encouraging their postdocs to develop their own ideas as their scientific training progresses. Through this mentoring style, junior investigators can further promote scientific discovery.

Within the larger biomedical research community, it seems to me that there needs to be a movement towards rewarding the search for scientific breakthrough while also increasing the merit given to mentoring. In our conversation, Dr. Lorsch informed me of two NIH funding mechanisms designed to promote discovery through higher risk project proposals: The NIH Director's New Innovator Award ([DP2](#)), and Maximizing Investigators' Research Award ([MIRA](#)). However, both require that applicants are already investigators.

To promote this at the trainee level, Dr. Lorsch suggests that study sections for training awards like the F32 predoctoral and K99 postdoctoral training grants should give greater merit to applicants who incorporate novel ideas in their proposals. Combined with Dr. Barres' suggestion that funding agencies consider an investigator's training track record, perhaps this is a step in the right direction.

*Dr. Barres began his award-winning research program at Stanford University School of Medicine in 1993 and was highly praised for his work on glial cells. Sadly, during the writing of this article, Dr. Barres passed away in December of 2017 after battling pancreatic cancer. He leaves behind a legacy as not only an outstanding scientist, but also an advocate who used his platform to promote equality, especially gender equality, in science.*



## NICHD Fellows Volunteer at International Zebrafish Meeting

*By Ashwin Bhandiwad, PhD*

The NICHD, in collaboration with the International Zebrafish Society, hosted the International Workshop on Zebrafish Neural Circuits and Behavior, a three-day meeting that took place November 15-17, 2017, at the Neuroscience Center Building in Rockville, Maryland. The event followed the annual Society for Neuroscience meeting in Washington, D.C., and was attended by around 170 principal investigators, postdoctoral researchers, and graduate students from 19 countries.

The meeting was designed to highlight novel and unpublished research in zebrafish behavior, physiology, and neuroanatomy, with a special focus on methods and tool development. This refined focus made it possible to explore the primary questions in the field with greater depth.

The emphasis on unpublished data not only facilitated discussions about novel methods, but also led to collaborative discussions between labs to implement these new techniques. Due to space constraints, the meeting had a strict attendance limit. However, postdocs at the NICHD volunteered at the meeting and had the unique opportunity to attend the workshops and build professional ties with investigators who presented their newest data.

Following opening comments from NICHD's Dr. Harold Burgess, one of the hosts of the workshop, speakers presented new genetic tools to label, visualize, and manipulate distinct neuronal populations. These tools expand the types of experiments that can be conducted using zebrafish. For example, newly developed fluorescent indicators have a high spatial and temporal resolution, facilitating precise, noninvasive monitoring of neural activity during early functional development.

Topics covered over the next few days included:

- » How circuits drive motivated and social behaviors
- » Learning and memory
- » Sensory systems and their functional development

A major focus of the conference was the grand challenge of mapping the entire brain of a five-day-old zebrafish at the single cell level.

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## NICHD Fellows Volunteer at International Zebrafish Meeting

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By this stage of development, zebrafish have a fully functioning central nervous system with a relatively small number of neurons (approximately a million times fewer than in humans), which makes whole-brain connectivity mapping possible with current technologies. Solving challenges in whole brain mapping on this small scale will provide a roadmap for solving this problem in larger vertebrates with more complex brains, including humans.

The meeting also hosted a workshop to combine and standardize newly developed tools in brain imaging and registration for general use in the zebrafish community. Brain registration is a technique by which an imaged brain is algorithmically mapped onto a model of a brain, creating a standardized reference that can be compared across multiple individuals. Research groups discussed how to share data and build a working system to incorporate imaging data from multiple labs into a centralized database of registered brains. These databases would contain whole brain images from transgenic animals as well as individual neuron tracings all mapped onto a model. This would aid in a direct comparison between brain regions and improve experimental design for experimental manipulations in the future. The workshop was the first step toward establishing this kind of database.

What types of new experiments could brain registration facilitate? One goal is to map the neurons driving specific behaviors, such as tracking prey. On the final day of the meeting, multiple groups presented new microscopy techniques using a conventional camera with a volumetric fluorescent microscope and automatic tracking. This set up, combined with larval fish that are genetically modified to show increased fluorescence upon neural activation, allowed groups to measure neural activity across the entire brain of a fish during a target behavior. The brain registration database would allow for brain mapping comparison between groups.

Many attendees remarked on the rapid progress that has been made in developing sophisticated methods for probing brain structure and function. New results are finally answering questions posed over a century ago. Volunteering at this particular meeting was a great opportunity for NICHD fellows, as the meeting offered a peek at the future of zebrafish neural research—even before many of the discussed techniques reach publication. Although some of these techniques are already in use within NICHD labs, this meeting gave NICHD fellows in attendance a new perspective about how labs are approaching similar questions, which provides critical insight going forward.

A common comment heard throughout the meeting was that some of these experiments would have been impossible to do five years ago. The stage seems set for even greater advances in the next five.



## The Rep Report

By Suna Gulay, PhD

As the current NICHD Basic Sciences Representative, I represent NICHD postdoctoral fellows at the NIH-wide Fellows Committee (FelCom) meeting every month. Do you have a concern or question that you want brought up at the next meeting? Contact me at [suna.gulay@nih.gov](mailto:suna.gulay@nih.gov)!

FelCom is discussing the possibility of connecting NIH fellows on social media platforms (in a way similar to the ClubPCR for young NIH scientists). This could be a place to learn about NIH and D.C. area social and career events, find housing, sell items, and gather information quickly. I will update you on future developments, but please feel free to join the conversation.



We have a variety of events and opportunities for all NIH fellows this month:

- » **February 9:** D.C. Area Postdocs Networking Event at Buffalo Billiards, Washington, D.C. The Visiting Fellows Committee organizes this event with Georgetown and George Washington Universities' postdoc associations. Stay in the loop and learn about future events through [Fellow-L](#) and [VFC-L listservs](#).
- » **February 13:** The FelCom Career Development Subcommittee will have a panel on *Careers in Science Writing and Editing*. [Learn more about this](#) and future events through [OITE Upcoming Events webpage](#).
- » The FelCom Service and Outreach Subcommittee is advertising Science Communication Volunteer opportunities for NIH fellows, through the Capital Area BioSpace (CABS) community. CABS is dedicated to support public engagement with science through public talks, hands-on science, and participation in biology research projects. They are looking for NIH fellows who would like to give a guest talk to their meet-up group, help teach or lead a hands-on science workshop or class, or help mentor science projects. All areas of biology/biomedical research are welcome. Contact Beth Tuck, co-founder of CABS, at [Elizabeth.Tuck@gmail.com](mailto:Elizabeth.Tuck@gmail.com) for more information. Their annual general meeting is coming up on **February 25, 2 p.m., at Nova Labs** in Reston, Virginia. They regularly meet in the Bethesda area as well, so please contact them to learn more and to volunteer.



Life Outside Lab  
*Fellows Social Networking Event*

INAUGURAL FELLOWS SOCIAL NETWORKING EVENT

JANUARY 25, 2018

TAPP'D BETHESDA



*Thanks to all who came out for a fun night of noshing and networking! Don't miss our next event on **April 26, 2018**.*



# Three-Minute Talks (TmT) Competition 2018

## SCIENCE COMMUNICATION TRAINING AND AWARDS PROGRAM

### NOW SEEKING POSTDOC & CLINICAL FELLOWS, GRADUATE STUDENTS & POSTBACS

- » Learn how to explain your research effectively to a broad scientific audience, in three minutes or less, with one-on-one professional training from public speaking coach Scott Morgan
- » Get the chance to win up to \$1,000 for use towards approved training or travel to a scientific meeting
- » Visit the [NICHD TmT Program website](#) for more details: up to 10 DIR fellows (postbac, predoctoral, postdoctoral, visiting and clinical) are invited to compete for these science communication honors

Course instructors will hone into common research practices that academic scientists are already familiar with, to help in the understanding of business concepts, and to demonstrate how your own experiences can mold you into a competitive job candidate.



## 2018 TmT PROGRAM TIMELINE AND DETAILS

FEBRUARY 23

### DEADLINE TO ENTER

- » To enter, email your completed submission form to [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov)
- » The submission form, competition rules and judging criteria are available at the [NICHD TmT Webpage](#)

WEDNESDAY,  
FEBRUARY 28

### "SPEAKING ABOUT SCIENCE" WORKSHOP

- » Tips on scientific storytelling with only one slide
- » Speaking in plain language while addressing the human health relevance for your research
- » Creating effective visual aids

FRIDAY, MARCH 9,  
AND  
WEDNESDAY,  
MARCH 21

### INDIVIDUAL COACHING/PRACTICE SESSIONS

- » Up to two one-on-one sessions with public speaking coach Scott Morgan
- » Practice your talk and obtain feedback on oral presentation skills and speech development

TUESDAY, MAY 8

### NICHD TmT COMPETITION

- » Three finalists will be chosen to advance to the next round
- » Finalists will each be awarded \$500 for approved training/travel and the opportunity to have your talk professionally produced for a video

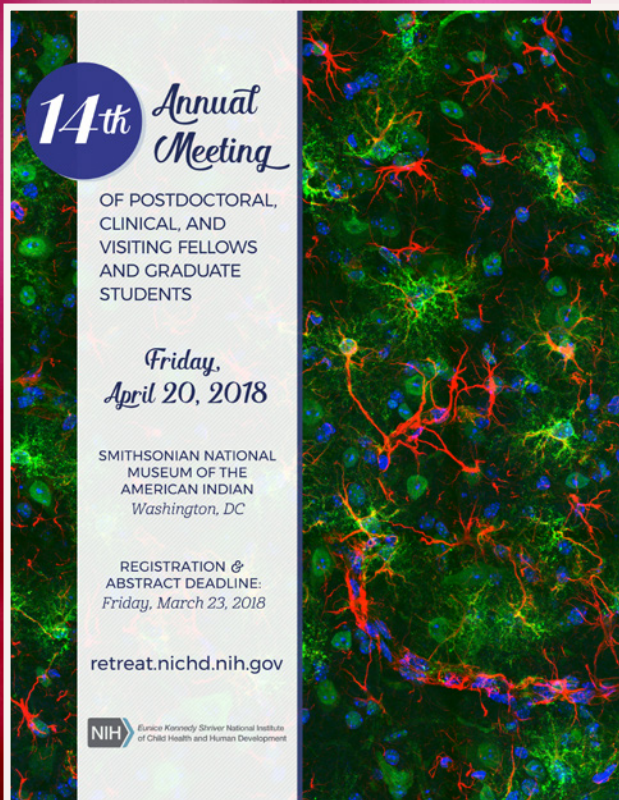
THURSDAY, JUNE 28

### NIH TmT COMPETITION

(With NICHD, NHGRI, NEI, NIAMS, & NIDCR fellows)

*First, second and third place winners from across all competing ICs will be chosen to receive an additional **\$500 training/travel award.***





## February Announcements

### SAVE THE DATE: FRIDAY, APRIL 20, 2018, ANNUAL NICHD FELLOWS MEETING

The 14<sup>th</sup> Annual Meeting for Postdoctoral, Clinical, and Visiting Fellows and Graduate Students is less than three months away. It will be held in D.C., at the Smithsonian's National Museum of the American Indian, on **April 20, 2018**.

This meeting will allow you to step away from the lab for a day to network with your NICHD colleagues, participate in a career exploration session, and learn more about the recent developments in our intramural research programs.

This year's retreat will include:

- » Keynote Address by Dr. Yvette Seger, Director of Science Policy at Federation of American Societies for Experimental Biology (FASEB)
- » Career round table discussions with professionals from academe, industry, teaching, government administration, grants management, consulting, science education, and technology transfer
- » Opportunity to network with invited career speakers during lunch session
- » Afternoon career services informational session, "Quick Tips for Career Success," by Dr. Philip Ryan, Deputy Director of Graduate Programs and Student Services in the NIH Office of Intramural Training and Education (OITE)
- » You can also stop by and talk one-on-one with Dr. Philip Ryan from OITE, for career services during the afternoon poster session
- » You can be a highlight at the retreat, too! You can present your work during the poster session, and four fellows will be selected to give a talk from their submitted abstracts

Online registration will go live on **Tuesday, February 13**, at <http://retreat.nichd.nih.gov>.

Don't forget to sign up early; space is limited to 110 fellows!

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## February Announcements

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### THREE-MINUTE TALKS



### THREE-MINUTE TALKS (TmT) DEADLINE TO ENTER IS FRIDAY, FEBRUARY 23

To enter, email your completed submission form to [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov).

The submission form, competition rules and judging criteria are available at [NICHD TmT Webpage](#). The first workshop, "Speaking about Science," will be held on Wednesday, February 28, from 10 AM to noon.

### NICHD FELLOWS ADVISORY COMMITTEE: SEEKING NEW MEMBERS!

The Office of Education formed an advisory committee in 2016. We are seeking several more dedicated members to help us develop and initiate academic support programs for the institute. Both domestic and visiting fellows are needed. We want to achieve a broad representation, culturally and academically, so we can address the needs of all our trainees at NICHD. The committee meets monthly to exchange ideas and informally discuss ways we can enhance and tailor the training experience within the NICHD intramural program.

Some potential topics for our committee are how to:

- » Increase participation in training activities
- » Expose fellows to various careers in science
- » Identify teaching opportunities
- » Identify internal and external research funding mechanisms
- » Establish a structure for sharing scientific and career resources within the institute

**The committee meets once a month on Thursdays, from 3 to 4 PM.** Our first few meetings for 2018 are **February 8**, and **March 8**.

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## February Announcements

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### NATIONAL HUMAN GENOME RESEARCH INSTITUTE FELLOWSHIP OPPORTUNITY

The National Human Genome Research Institute (NHGRI) will be accepting applications for the 2018 Genetics and Public Policy Fellowship **from February 26 to April 27, 2018.**

The Genetics and Public Policy Fellowship is designed as a bridge for genetics professionals wishing to transition to a policy career. This unique fellowship provides three separate types of policy experience: within NHGRI's Policy and Program Analysis Branch; on Capitol Hill serving elected officials in the Legislative Branch; and at the American Society for Human Genetics (ASHG) in the non-profit science advocacy sector.

Please visit [Genetics & Public Policy Fellowship](#) to learn about the fellowship and how to apply.

### JUDGES NEEDED FOR MONTGOMERY COUNTY SCIENCE FAIR

*Give back to the community by volunteering to judge!*

From the [Science Montgomery](#) website:

The Montgomery County Science Fair is an opportunity for several hundred Senior High and Middle School students to think creatively, problem solve, learn how to carry out a science experiment, and have some fun while doing so. **Our Fair's success depends upon the many scientists who volunteer to judge at the Fair.**

The Science Fair will be held on **Saturday, March 10, 2018** at the FDA White Oak Campus, 10903 New Hampshire Avenue, Silver Springs, MD 20993.

**Register to judge by Saturday, February 24.** For more information, and to register, visit: [Montgomery County Science Fair 2018](#).

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## February Announcements

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### NIH GRANT WRITING COURSE

**Are you planning to apply for a NIH research grant in 2018?** There are various application due dates for NIH grants, and we are offering a grant-writing course that's just for you!

In collaboration with three other institutes, we are offering an **NIH Grant Writing Course** for fellows in March/April 2018. Led by Dr. Paula Gregory (Professor, Department of Genetics, Louisiana State University), this course will help students prepare a successful NIH grant proposal, with special emphasis on the career transition "K" grant series. With high reviews from past participants, NHGRI has offered this course for several years, and as a result, many of their fellows have been awarded NIH grants!

In a small-group setting, classes will combine didactic presentations with group discussions, assignments, and proposal writing. A distance learning component will allow you to submit writings between the in-person meetings, and receive edits and valuable feedback. Participants will also conduct an NIH mock study section. During the process of scoring real grant applications, trainees will learn about the review process and the key aspects of a successful application.

Below is the schedule for this on-campus course (must attend all sessions):

**March 8: 1 PM - 4 PM**

**March 9: 9 AM - 12 PM**

**March 22: 11 AM - 12 PM & 1 PM - 4 PM**

**March 23: 9 AM - 12 PM**

**April 5: 1 PM - 4 PM**

**April 6: 9 AM - 12 PM**

*There are four spots available for NICHD fellows.*

If you would like to join this course, please email Dr. Yvette Pittman at [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov) and indicate which NIH grant you are planning to apply for.



## February Events

**THURSDAY, FEBRUARY 8, 3 – 4 PM**

**NICHD Fellows Advisory Committee Meeting**

The committee meets monthly to exchange ideas and informally discuss ways we can enhance and tailor the training experience within the NICHD intramural program. The committee meets once a month on Thursdays, from 3 to 4 PM. Please contact Dr. Yvette Pittman at [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov) if you are interested in joining the group.

**THURSDAYS, FEBRUARY 15 AND 22**

**The Business of Science: Your Guide to Career Success, by [SciPhD](#)**

**Session 3:** Applied Communication & Networking, and Financial Literacy

**Session 4:** Negotiating Total Compensation & Leadership Styles, Project Management, and Wrap-up & Graduation

A new training for fellows and graduate students interested in pursuing a career in industry, the course is designed to translate academic research skills into the business-oriented qualifications that hiring companies are looking for. Course instructors will hone into common research practices that academic scientists are already familiar with, to help in the understanding of business concepts, and to demonstrate how your own experiences can mold you into a competitive job candidate.

If you would like to attend the last two sessions, please contact Dr. Yvette Pittman at [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov).

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## February Events

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### THURSDAY, FEBRUARY 22, 9 AM – 4 PM

The 14<sup>th</sup> Annual NIH Graduate Student Research Symposium  
Natcher Conference Center

This daylong [event](#) showcases graduate student research at the NIH and includes:

- » Keynote address from Dr. Eric Betzig, Nobel laureate and group leader at Janelia Research Campus, Howard Hughes Medical Institute
- » Elevator pitch competition
- » Student talks
- » Poster presentations of dissertation research
- » Presentation of the annual Outstanding Mentor Awards
- » The annual GPP graduation ceremony
- » NIH Graduate Student Research Awards (NGSRAs)

### WEDNESDAY, FEBRUARY 28, 10 AM – 12 PM

Three-Minute Talks (TmT) Workshop #1: “Speaking about Science”

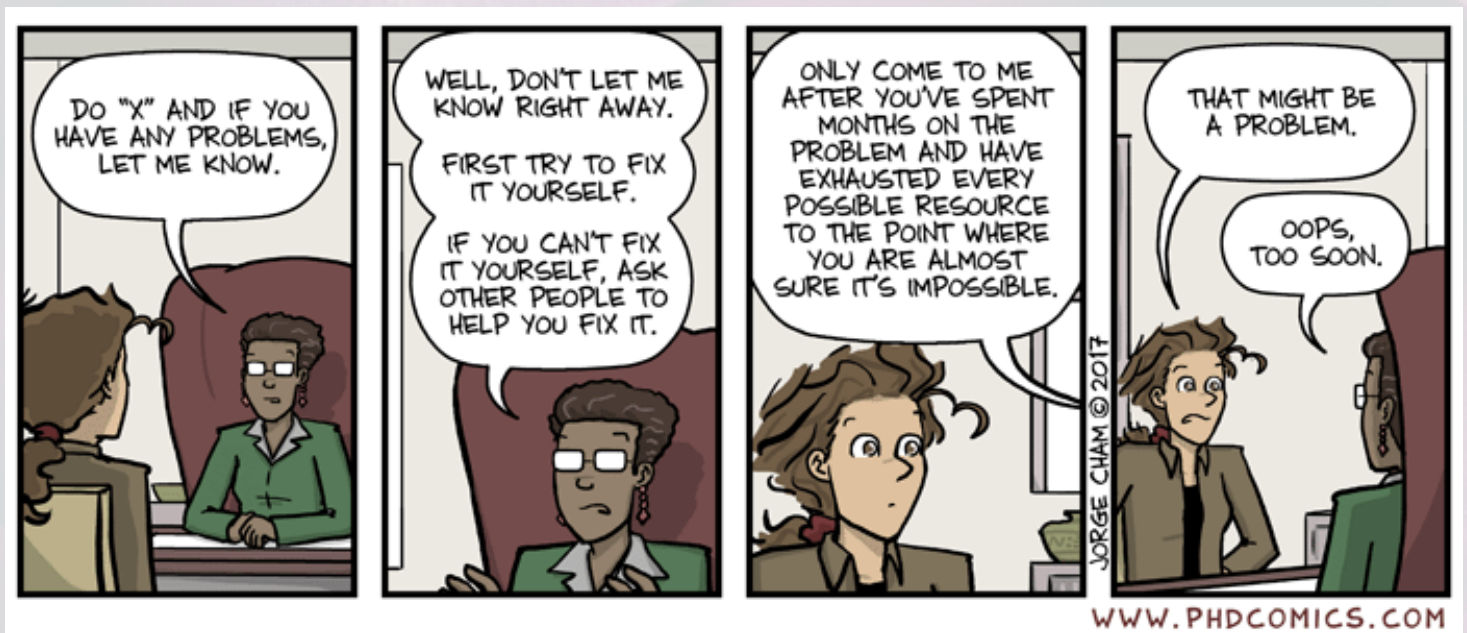
Led by public speaking coach Scott Morgan, this workshop offers tips on scientific storytelling, speaking in plain language while addressing the human health relevance for your research, and creating effective visual aids.

This event requires registration. For more information, please contact Dr. Yvette Pittman at [yvette.pittman@nih.gov](mailto:yvette.pittman@nih.gov).

The next TmT activities: two individual coaching sessions with Scott Morgan, on Friday, March 9 and Wednesday, March 21.



## PHD Comics



<http://phdcomics.com/comics.php?f=1992>